MAKERERE UNIVERSITY

PREVALENCE AND IMMEDIATE NEONATAL OUTCOMES OF NUCHAL CORD AT BIRTH IN MULAGO HOSPITAL: A CROSS SECTIONAL STUDY.

PRINCIPAL INVESTIGATOR

ADERUDAVID; MBChB (MAK)

A Dissertation Submitted to the Directorate of Research and Graduate Training in Partial Fulfillment of the Requirements for the Award of the Degree of the Master of Medicine in Obstetrics and Gynecology of Makerere University.

June 2014

ABSTRACT:

Background: Nuchal cord is the leading cord accident and can lead to intrauterine fetal death, failed fetal decent and neonatal death when the cord is wrapped around the neck tightly. Although the nuchal cord is implicated in most intrapartum poor neonatal outcomes, the actual significance that a nuchal cord has on the intrapartum events and neonatal outcomes is still controversial. In a setting of low resources and suboptimal fetal surveillance in labour, a nuchal cord could have a greater negative impact on neonatal outcomes than in situations where fetal distress is more easily diagnosed and expeditiously managed.

Objective: This study aimed to determine the prevalence of cord around the neck at delivery and to describe the immediate neonatal outcomes of babies born with a cord around the neck in the department of Obstetrics and Gynecology, Mulago hospital.

Methods: This was a descriptive cross-sectional study. Ethical approval for the study was granted by School Of Medicine Research and Ethics Committee of Makerere University. The study was conducted from 1st November 2013 to 31st January 2014 on 367 participants (mother baby pairs) who delivered in the department of Obstetrics and Gynecology Mulago Hospital, Uganda. All women admitted in labour at 28 weeks gestation and above with singleton fetuses in cephalic presentation and delivered during the study period vaginally or by caesarean delivery were included in the study. Documentation of presence or absence of cord around the neck was made at delivery. Outcome variables between the two groups were compared. The outcome variables described were meconium staining of liquor, mode of delivery, one and five-minute Apgar score, whether baby was alive or dead at delivery and need for admission to the neonatal intensive care unit. Data was entered in to Epidata version 3.1 and exported to STATA version 11 for analysis.

Results: The prevalence of nuchal cord in this study was 55.2 %.The prevalence of a single loop of cord around the neck was highest (39.1%). Sixty seven out of two hundred and two (33.2%) of the babies born with a nuchal cord required resuscitation compared to only 24/165 (14.5%) of those born with no nuchal cord, (p=<0.001). The presence of meconium at birth was more common in the deliveries with nuchal cord [116/202 (57.4%)] as compared to those without cord around the neck [48/165 (29.1%)], (p<0.001). Apgar score less than 7 at one minute for babies born with a cord around the neck was 37/202 (18.3 %) and in those born with no cord around the neck was 15/165 (9.1%), (p=0.01). Five minute Apgar score less than 7 in babies with a nuchal cord at

delivery was 8/202 (4.0 %) and was 2/165 (1.2%) in babies born with no cord around the neck, p=0.04. Neonatal unit admissions were similar among those with cord around the neck compared to those babies without the cord around the neck (6.9% and 5.5% respectively), p=0.57. The Apgar scores at 1 and 5 minutes and meconium staining at birth at delivery were comparable for babies with single loop of cord versus those with 2 or more loops(p=0.09,0.08 and 0.24 respectively). Apgar score < 7 at 1 and 5 minutes and grade 3 meconium staining were worse for babies born with a tight cord compared with those born with a loose cord [20/32 (62.5%) vs. 12/32 (37.5%), (p<0.001); 7/8 (87.5%) vs1/8 (12.5%), (p=<0.001) and 5/6 (83.3%) vs. 1/6 (16.7%),(p=0.02)] respectively. There were four still births that occurred to babies born with a tight nuchal cord. There was however no early neonatal death reported within 24 hours of delivery for all the study participants.

Conclusion: The prevalence of cord around the neck at delivery in Mulago hospital was 55.2%. Cord around the neck, particularly tight cord irrespective of number of loops, was associated with a low Apgar score at 1 and 5 minutes, increased meconium staining at birth and increased transfer rate to the neonatal care unit.